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MINIMALLY INVASIVE SURGICAL MAZE IS INADEQUATE WITHOUT INTRA-OPERATIVE ELECTROPHYSIOLOGY TESTING

ACC Poster Contributions
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Background: Minimally invasive surgical (MIS) MAZE in long-standing persistent atrial fibrillation (AF) has had suboptimal outcome, likely due to incomplete transmural lesions. Currently there are no conventional testing standards, and the success rate for MIS MAZE using modern ablation techniques is not clear.

Methods: Ten sequential patients with long-standing persistent AF underwent MIS MAZE using the Atricure® system with intra-operative EP testing. EP study was performed by duo-decapolar 1-2-1 spacing catheter (St. Jude Medical) placed epicardially by the surgeon at the regions of interest, as directed by the electrophysiologist. Post-ablation EP study and assessment of conduction block with differential pacing and arrhythmia induction were performed.

Results: All patients had acute pulmonary vein isolation. In extended lesion sets, nine of ten patients had no acute block and required an additional 3 ± 2 ablations to confer block as guided by repeat EP testing. One patient had acute block with an average of 7 ± 2 ablations. 4 patients (40%) had inducible macro re-entrant arrhythmias, and all 4 were able to be mapped, entrained, and ablated epicardially.

Conclusion: MIS MAZE is effective in achieving acute pulmonary vein isolation. However, it is ineffective in achieving transmurality in extended lesion sets. EP testing intra-operatively is critical in achieving linear and complete transmural lines.